GOVERNMENT TOOL ROOM
&
TRAINING CENTRE
AT
DUMKA

TECHNICAL SPECIFICATION
FOR
MEASURING INSTRUMENTS, CUTTING TOOLS, MISCELLANEOUS TOOLS AND TACKLES, OFFICE EQUIPMENTS AND KITCHEN ITEMS

TS No. MEC/11/24/10G6/TS/102 Rev.0

MECON LIMITED
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Prepared By **Reviewed By**

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1.0 SCOPE OF WORK

1.1 The scope of work of the tenderer covers design, manufacture, assembly, testing at manufacturer's works, painting, delivery F.O.R. site, storage, erection as per approved layout drawings including supervision, testing and commissioning of Equipment as specified in content item bearing serial no. 3 inclusive of associated control, electrical, and all accessories required for Government Tool Room & Training Centre (GTRTC) Dumka. The equipment shall meet the specified performance to the satisfaction of the Owner.

1.2 The tenderer shall include in its scope all accessories and auxiliaries,, measuring and control instruments, all internal and interconnecting cables and wires, safety devices and materials which are not specifically mentioned here but are otherwise required to complete the functioning of the equipment offered in every respect for its satisfactory performance and safe operation.

2.0 SPECIAL INSTRUCTIONS TO THE TENDERER

2.1 This specification shall be read in conjunction with the following documents:

i) Invitation to tender
ii) General condition of contract

2.2 Applicable codes and standards

All materials used and equipment supplied shall be new and the best of their respective kinds and shall comply with the latest versions of the relevant Indian Standard Specifications.

2.3 The tenderer shall clearly specify the assumptions and parameters regarding the tender. Deviations if any, from this technical specification, shall be clearly listed out by the tenderer.

2.4 Delivery schedule

The tenderer shall indicate his best delivery schedule in terms of weeks.

i. Inspection at manufacturers work
ii. Delivery at site
iii. Erection at site
iv. Commissioning at site including performance guarantees

2.5 Inspection and Performance test

The tenderer shall offer the machine for inspection & testing by Purchaser GTRTC or any other customer approved Inspection agency (MECON)

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2.5.1 Testing and inspection at manufacturer's works

a) All measuring and metrology equipment shall be inspected and tested according to the relevant standards/codes of practice & Quality Assurance Plan (QAP) approved by MECON to ensure that the equipment conforms to specification requirements. In absence of standards, procedure for inspection/testing shall be mutually agreed between the Purchaser/Consultant and the tenderer. All electrical equipment shall also be tested as per relevant IS codes or equivalent and the approved QAP.

2.5.2 Final Acceptance Test

After installation, testing of equipment shall be carried out by manufacturer at site in accordance with Quality Assurance Plan approved by MECON, applicable IS/ Manufacturer /International standards for safe and reliable operation. Manufacturer shall provide all test tools/ equipment, consumable, test parts, test program and validation data to the Purchaser/Consultant.

2.5.3 Inspection by the Purchaser/Consultant shall not absolve the supplier from his responsibility to fulfill the requirements and performance detailed in this specification.

2.5.4 The Purchaser/Consultant shall have the right to reject the equipment / materials if the same are found not conforming to the specification.

2.5.5 Accessibility and safety

2.5.6 All equipment offered shall allow adequate and easy access to its parts to facilitate connecting up and maintenance.

2.5.7 Design and selection of equipment shall be made with the following, in view:

i) Safety of personnel (All moving parts shall be well guarded and protected)
ii) Uninterrupted operation
iii) Long life of equipment
iv) Ease of maintenance at optimized cost.

2.5.8 Painting

All equipment shall be suitably cleaned, painted and protected against corrosion and damage. The colour of the equipment will be as per IS: 5-1994 (or as confirmed by Purchaser/Consultant) at the time of placement of order.
Necessary guidelines for types of paint, coats and surface finish are given below :

a) Surface preparation : Blast cleaning to near white metal
b) Painting scheme :
   i) Requisite grade of primer and intermediate paint at shop.
   ii) Final finish paint at purchasers site after commissioning (if required)

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2.6 Spares and tools

The tenderer shall furnish alongwith the tender a detailed list of essential spares required for two years of smooth and satisfactory single-shift operation of the equipment. A list of special tools and tackles, if any, required for operation / maintenance of the equipment shall also be furnished. Item-wise prices for spares and special tools and tackles shall be indicated separately in the price bid.

2.7 Name plate

A non-corrodable nameplate giving major characteristics of the equipment shall be provided.

2.8 Systems of units and language

Calibration of all instruments, dimensions in drawings, technical data, weights and quantities shall be in metric units. All drawings, nameplates of equipment and operation and maintenance manuals shall be in English language.

2.9 Performance and guarantee

All equipment shall be guaranteed for workmanship / materials and satisfactory performance in accordance with the relevant clauses and technical specification of the machine as furnished in the tender for a period of twelve months from the date of commissioning and acceptance by Purchaser. The guarantee for performance shall cover individual machine tool including electrics/instruments and controls for their rated inputs/output.

2.10 The manufacturer shall in turn hold sub-contractors responsible for the performance of out sourced components and systems (e.g control systems) etc.

2.11 Any defect developed and/ or detected during the guarantee period shall be made good by the supplier at his own cost to the satisfaction of the Purchaser and if necessary, any modification / rectification or replacement shall be carried out by the supplier.

2.12. After sales service

The supplier shall provide after sales service in the form of periodic checking of the equipment for proper upkeep for a period of one year after the date of commissioning and thereafter as and when approached. The tenderer shall spell out clearly in his offer the infrastructure he has to be provided for such after sales service, as and when required.

2.13 Ability of the tenderer

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The tenderer shall satisfy the Purchaser/Consultant that he possesses necessary technical know-how to execute the work. Necessary particulars and statements indicating list of major orders executed in the last three years for supply of similar equipment shall be furnished alongwith the tender.

2.14 Training

The manufacturer shall have good infrastructure for offering training in the areas of operation and carrying out maintenance of the machine. Detailed manual for operation and maintenance shall be made available.

The number of personnel that will be trained, and duration of training will be mutually agreed upon before placement of order.

2.15 The tender shall be complete in all respects inclusive of complete data as demanded under clause 4.0 of this specification. Incomplete tender will be liable to be rejected.

2.16 The Purchaser/Consultant reserves the right to accept or reject any tender without assigning any reasons.

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3.0 TECHNICAL SPECIFICATION

3.1 Mechanical (General)

3.1.1 This document covers different types of Mechanical Equipment as per equipment wise technical data /features / Specifications given against each under Clauses 3.2 and 3.3 which follows .

3.1.2 The design and construction of the machine tools and accessories shall incorporate the latest features to ensure high precision, productivity and flexibility. Material shall be new and the workmanship shall be of very high standard with regard to accuracy, rigidity, power, safety, material, electrical,control, ergonomics, aesthetics etc.

3.1.3 All levers, controls, push buttons etc, shall be conveniently grouped and located within easy reach of operator.

3.1.4 A complete set of service tools levers, cranks etc. shall be supplied with each equipment without any extra cost for easy operation and maintenance. Minimum two copies of instruction manuals, showing operation and maintenance procedures, major drive and greasing diagrams, electric circuits, lubrication and hydraulic circuits etc. shall be supplied with each equipment.

3.1.5 All equipment shall be so packed as to avoid any damage to finished surfaces. Finished surface shall be coated with corrosion preventive compound and covered by oil paper.

3.1.6 The components of all equipment shall be designed assembled and tested in accordance with Bureau of Indian Standards, wherever available. In case where suitable Indian Standards are not available/ not specifically indicated, the equipment shall conform to other applicable international standards such as BS, ASME , ISO and DIN.

3.1.7 Standard and optional accessories

a) A list of standard accessories offered alongwith each equipment shall be submitted alongwith the tender.

b) In respect of optional accessories, item-wise technical details and prices shall be submitted to enable Purchaser/Consultant to choose from.

c) If any of the optional accessories is factory assembled and cannot be retrofitted, the same shall be highlighted.

d) If any accessory is essentially required to run the machine for the quoted configuration of machine the same, shall be indicated and separately quoted.

e) Foundation pads and bolts shall be part of supply.

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f) First fill of oil and lubricants and other items such as shots in shot blasting machines, etc will be part of supply.

3.2 Electrical (General)

3.2.1 Scope of work

The scope of work involves supply, testing, commissioning of all electrical equipment (vij. drives & controls) coming as part of machine tool/equipment specified in 3.0 above.

3.2.2 Design criteria : All electrical equipment and cable shall be designed/ used and tropicalised for following Indian conditions.

a)	Site condition			
i)	Installation	:	Indoor	
ii)	Altitude	:	Less than 1000m MSL	
iii)	Ambient temperature	:	45°C	Not occurring simultaneously
iv)	Relative humidity	:	100%	
b)	Systems data			
i)	Supply voltage	:	415V +/- 10%	
ii)	Rated frequency	:	50 Hz +/- 5%	
iii)	Combined voltage and frequency variation	:	± 10%	
iv)	Phase and wires	:	3 phase 4 wire	
v)	System grounding	:	Solidly grounded	

The equipment shall be designed for connection of Aluminium power cables of adequate size.

Each unit and component shall be clearly labelled in accordance with the relevant wiring diagrams and control scheme.

Special attention shall be given to provide danger boards, guards, rubber mats in front of open type of panel boards and switch boards and all other relevant safety devices.

Wherever multiple interlocks are used, a selector switch and lamp shall be provided for checking the state of each interlock circuit. Provision shall be made for out of sequence operation for testing.

3.2.3 Each machine shall be connected to a single source of power. Distribution of power to the different drives of a machine shall be the integral part of the machine.

3.2.4 Control circuit

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The control circuit shall be fail safe. Every endeavour shal be made to arrange the control circuits so as to ensure in all circumstances the safety of personnel, even in the event of faulty operation, and to protect effectively the machine and work piece, irrespective of a failure of the apparatus or a faulty manoeuvre of the operation.

A machine tool shall be provided with devices enabling:

a) to stop the machine as fast as possible in case of emergency and
b) to disconnect the whole equipment from the supply voltages.

3.2.5 Protection shall be provided to prevent contact being made accidentally with live parts at a voltage of more than 50V.

3.2.6 All electrical equipment shall be legibly and indelibly marked in such a way as to be readily visible when the equipment is installed.

There shall be at least one name plate with following details:

a) Name of the manufacturer of the electrical equipment, or his trade mark.
b) Nominal voltage with indication of DC or AC and the frequency.

3.2.7 Manual

The equipment Manual (operation & maintenance) shall contain the following data:

a) Installation drawing
b) Circuit or schematic diagram
c) Sequence of operation
d) Wiring diagram
e) List of units in the equipment
f) Maintenance instructions, if any.

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3.3 Technical data of specific machine/equipment

Note: The Tenderer may note that the basic capacity related parameters are the minimum requirement. Other parameters which can be manufacturers' design and configuration specific, shall be quoted as manufacturers standard and commercially proven parameter for judging the overall technical suitability of the machine.

PART-A

3.3.1 Measuring Instruments

Preferred Make : Mitutoyo/ Wilson W Wolpert/ TESA/ MAHR

Sr. No.	Specification	Accuracy	Quantity	Reference make
1.	Depth Caliper (200 mm) Digital	Least Count – 0.05mm Accuracy : +/- 0.05	3	Mitutoyo 527-202
2.	Depth Caliper (300 mm) Digital	Least Count – 0.05mm Accuracy : +/- 0.08	3	Mitutoyo 527-203
3.	Caliper for Scribing (0-300 mm)	Least count: 0.05 mm Accuracy : +/- 0.05	3	Mitutoyo 536-223
4.	Dial Gauge Dia 40 mm	Range: 0-10mm Least Count: 0.01 mm	4	Mitutoyo 1044F
5.	Standard Dial Test Indicator with Stand	Range: 0-1 mm Least Count: 0.01 mm	2	Mitutoyo 513-424T
6.	Steel Rules 300mm		10	Mitutoyo 182-131
7.	Steel Rules 500mm		4	Mitutoyo 182-171
8.	Steel Rules 1000mm		2	
9.	Vernier Caliper	0-150MM/0-6" Least Count : 0.02mm Accuracy : +/- 0.05mm	10	Mitutoyo 530-312
		0-200 MM/0-8" Least Count : 0.02mm Accuracy : +/- 0.03mm	4	Mitutoyo 530-118
		0-300MM/0-12" Least Count : 0.02mm Accuracy : +/- 0.04mm	4	Mitutoyo 530-119
10.	Digital Outside	Range: 25-50mm	2	Mitutoyo 293-241

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	Micrometer	Resolution : 0.001mm Least Count: 0.001 mm Accuracy:± 0.002 mm		
11.	Dial Gauge Dia 40 mm	Range : 0-5mm Least Count : 0.001mm	2	Mitutoyo 2118F
12.	Radius Gauge (1-7mm)		4	Mitutoyo 186-105
13.	Radius Gauge (7-15 mm)		4	
14.	Screw Pitch Gauge	(Metric and British)	2	Mitutoyo 188-102
15.	height & scribing gauge with vernier read out	Range: 300 MM Least Count: 0.02 MM	2	Mitutoyo 514-106/107
16.	Digital outside micrometer	Range: 0-25mm Least Count: 0.001 mm	1	Mitutoyo 293-805
17.	outside micrometer	Range: 50-75mm Least Count: 0.01 mm	1	Mitutoyo 406-523-30
18.	taper gauge	Morse Taper no. 1, 2, 3, 4 & 5	1 Each	Graphica Guages and Tools, Harshman Guages/Equivalent
19.	Feeler Gauge	25 blades, 12mm wide, 75mm long	1	Eastern Industries, Pittsburgh/Equivalent
20.	Magnifying Glass 75 mm	Handheld -80 mm dia	1	
21.	Profile Projector 350mm	Projection Screen – 315 XY range – 200x100mm Resolution -0.001mm Angle Reading – 0.01˚or 1˚ (Switchable) Projection lens- 10X , 50X,100X Measuring Unit- Linear scale Surface Illumination – Halogen built 24V, 150W Magnification accuracy – Contour - +/- 0.1%, Surface- +/- 0.15%	1	Mitutoyo 302-701

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PART-B

3.3.2. Cutting Tools

Preferred make : Addison/ Totem/Taegutech/Equivalent

Sr. No.	Specifiation	Specification	Quantity
1	HSS Hand Tap M5	Totem	10
2	HSS Hand Tap M6	Totem	10
3	HSS Hand Tap M8	Totem	10
4	HSS Hand Tap M12	Totem	5
5	HSS Hand Tap M16	Totem	5
6	HSS Die M6	Totem	5
7	HSS Die M8	Totem	5
8	HSS Die M12	Totem	5
9	HSS Die M16	Totem	5
10	Reamer (Dia 8H7)	Addison	5
11	Reamer (Dia 10H7)	Addison	5
12	Reamer (Dia 16H7)	Addison	2
13	Reamer (Dia 18H7)	Addison	2
14	Adjustable Reamer (10 mm to 15 mm by 75 mm)	Addison	1
15	Allen Key Set	Matric (1 to 20 mm)	2 Set
16	Knurling Tool	Straight	5
17	Knurling Tool	Diamond shape	5
18	Boring Tool Holder	16 mm dia	5
19	Drill Chuck	1/2"	5
20	Centre Drill dia. 4 (Standard)	Addison	4
21	Soft Hammer 200 gm	Aluminium	2
22	Soft Hammer 500 gm	Copper	2
23	HSS Slot Drill (Dia 3)	Addison	10
24	HSS Slot Drill (Dia 4)	Addison	10
25	HSS Slot Drill (Dia 6)	Addison	10
26	HSS Slot Drill (Dia 7)	Addison	10
27	HSS Slot Drill (Dia 8)	Addison	10
28	HSS Drill Dia 11.8	Addison	5
29	HSS Drill Dia 9.8	Addison	5
30	HSS Shell End Mill Dia 80x45x27	Addison	10
31	HSS Cylindrical Cutter 63x90 bore dia.27	Addison	3
32	HSS Cylindrical Cutter 80x90 bore dia.27	Addison	3
33	HSS Shell End Mill Dia 50x45x27	Addison	10
34	HSS End Mill Dia 10	Addison	10
35	HSS End Mill Dia 12	Addison	10

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36	HSS End Mill Dia 16	Addison	10
37	HSS End Mill Dia 18	Addison	10
38	HSS End Mill Dia 20	Addison	10
39	HSS End Mill Rough Dia 25	Addison	10
40	Collet Adaptor ISO 40	Addison	2
41	HSS Dovetail Cutter 25x45˚	Addison	5
42	HSS Dovetail Cutter 25x60˚	Addison	5
43	HSS Inverted Dovetail Cutter 25x45˚	Addison	5
44	HSS Inverted Dovetail Cutter 25x60˚	Addison	5
45	HSS Double Angle Cutter 60˚	Addison	2
46	HSS Single Angle Cutter 50˚	Addison	2
47	HSS Slitting Saw (Dia 100x3xDia27)	Addison	5
48	HSS Convex Cutter R8 (Dia 80x16xDia27)	Addison	5
49	HSS Side & Face Cutter (Dia 80x8xDia27)	Addison	5
50	HSS Side & Face Cutter (Dia 160x10xDia27)	Addison	5
51	HSS Side & Face Cutter (Dia 160x16xDia27)	Addison	5
52	HSS Side & Face Cutter (Dia 100x10xDia27)	Addison	5
53	Sleeve 1-2	Addison	3
54	Sleeve 2-3	Addison	3
55	Arbor for Horizontal Milling Machine (ISO 40/ Dia. 22x500)	Addison	1
56	HSS Tool Bit (1/4"x6")	Miranda	20
57	HSS Tool Bit (1/2"x6")	Miranda	20
58	HSS Tool Bit (5/8"x6")	Miranda	20

PART - C

3.3.3 Miscellaneous Tools and Tackles :

Preferred make : Taparia/ jhalani/ Everest/ Snap-on/ Mekester/ ELGI/JK/ Miranda/ Hindustan/Equivalent

Sr. No.	Specifiation	Specification		Quantity
	Hand Tools (Taparia/ equivalent)			
1	Adjustable Spanner	Product No.		

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		1169N	TAPARIA	2
		1170N	TAPARIA	2
		1171N	TAPARIA	2
		1172N	TAPARIA	2
		1173N	TAPARIA	2
		1174N	TAPARIA	2
2	Combination plier	Product No.		
		1621-6	TAPARIA	2
		1621-7	TAPARIA	2
		1621-8	TAPARIA	2
3	Round Nose Plier	Product No.		
		1431	TAPARIA, 1420-8	2
4	Long Nose Plier	Product No.	TAPARIA	
		1421	FLAT NOSE	2
		1430	LONG NOSE	2
5	Circlip plier	Product No.	TAPARIA	
		1441	STRAIGHT NOSE	2
		1442	BENT NOSE	2
6	Side Cutting plier	Product No.		
		1121-6	TAPARIA	2
		1122-6	TAPARIA	2
7	Screw driver (Engineer's)	Product No.		
		933	TAPARIA	2
		902	TAPARIA	2
		912	TAPARIA	2
		922	TAPARIA	2
		926	TAPARIA	2
		829	TAPARIA	2
		931	TAPARIA	2
8	Electrician's Screw driver	Product No.		
		936	TAPARIA	2
		737	TAPARIA	2
		832	TAPARIA	2
9	Line Tester	Product No.		
		817-1413	TAPARIA	2
10	Universal Set	Product No.		
		1003	TAPARIA	2
11	Socket Set: Comprising Sockets, accessories extension bar, universal joint, T-handle, reversible racket	Product		
		S-14 M (mm) (22 sockets + 5 accessories)	TAPARIA	1 Set
		S-22M (mm) (11 sockets+ 4	TAPARIA	1set

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		accessories)		
12	C-clamp	Product No.		
		1259	TAPARIA	5
		1261	TAPARIA	5
		1264	TAPARIA	5
13	Hammers (ball pein & claw)	Product no.	AMBIKA	
		200BP	BP	10
		500BP	BP	10
		800 BP	BP	5
		450BP	TAPARIA, CLAW	5
14	Pipe wrench	Product No.	TAPARIA	
		1273	12"	3
		1275	18"	3
		1276	24"	2
15	Chisel	Product No.	TAPARIA	
		102	101-125 MM	6
		102N	102-150 MM	6
		106N	106-250 MM	6
		1046	150 MM FLAT	10
		1048	200 MM FLAT	10
16	Punches	Product No.		
		1884	TAPARIA 1884	12
		1885	TAPARIA 1985	12
17	Hacksaw frame	- Overall length - 440mm	HERMAN HE606 COATED TUBULAR TYPE, HE 606	24
18	Grease Gun	- Thread 1/8" NPT	HERMAN HE 607	5
19	Rotary barrel pump	- pump inlet 25mm	HERMAN HE 612	1
20	Pistol grip oil can	- capacity 500ml	HERMAN HE 610	15
VICES etc (Herman/equivalent)				
1	Multi purpose Bench & Pipe Vice	Size	HERMAN, HE 104	1
		150mm (HE-104)		
2	Precision tool Room Vice	Sizes : 150mm Jaw Width 200mm Jaw Opening	HERMAN, HE 105	20
3	Clamping baby vice	Sizes :		

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		50mm (HE-145)	HERMAN HE 145	1
		70mm (HE-145)	HERMAN HE 145	1
	PRECISION TOOLS (GROZ/ Equivalent)			
1	Engineers' precision Square	150mm		5
		(ordering no. 01003)	GROZ 01003	
2	Engineers' precision Square	300mm		5
		(ordering no. 01007)	GROZ 01007	
3	Machinist's Square	150mm		6
		(ordering no. 01103)	GROZ 01103	
4	Machinist's Square	300mm		
		(ordering no. 01107)	GROZ 01107	6
5	Machinist's Vee block & clamp set	Clamping ordering		
		Capacity No.		
		37mm 03004	GROZ 03004	6
		25mm 03000	GROZ 03000	6
6	Magnetic vee block	Clamping ordering		
		Capacity No.		
		5 to 70mm 02901	GROZ 02901	6
7	Spring calipers & Dividers	Clamping ordering	GROZ MEASURING CAP	
		Capacity No.	ORDER NO.	
	- inside caliper	150mm 01402	GROZ 1402	10
	- outside caliper	150mm 01412	GROZ 1412	10
	- spring divider	150mm 01422	GROZ 1422	10
8	Scriber	ordering No.		
	-length 114mm	03212	GROZ 03212	6
9	Sheet metal wire gauge	ordering No.		

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	- Rectangular	01212	GROZ 01212	2
10	Super Precision Vices	ordering No.		
	-jaw opening 95mm	35201	GROZ 35201	3
11	Super Precision sine vice	ordering No.		
	- jaw opening 95mm	35210	GROZ 35210	2
12	Super Precision angular milling vice	ordering No.		
	- jaw opening 150mm	35004	GROZ 35004	5
13	Number & Letter punches - Stamp size 3mm	ordering No.	GROZ ORDER NO.	
		25902	GROZ 25902	4
		26102	GROZ 26102	4
14	Tap Handle	Ordering No.		
	* T handle type M2-M6	9301	GROZ 9301	10
	* T handle type M6-M12	9304	GROZ 9304	10
15	Steel Parallels (pairs)	Ordering no.		
	- Length 160 mm	1702	GROZ 1702	5
	- Length 200 mm	1703	GROZ 1703	5
Electric Power Tool (Atlas Copco / Bosch/ Black and Decker/ Hitachi)				
1	Straight Grinder	Power - 400W Speed - 30,000 rpm Collect dia. -6mm	BOSCH GGS 27	1
2	Angle Grinder	Disc Dia - 125mm Speed - 10,000 rpm Power - 750W	BOSCH GWS10-125C	1
3	Pistal Drill	Dia. In steel - 10mm Power - 600W	BOSCH GBM450	1
	Tool Kit Make : Everest/ Mekaster/Taparia			
4	Tool Kit for mechanics with chest	Size of box – 600x 380 x 415mm No. of tools - 102	EVEREST 1003	1

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5	Tool Kit for line man	Size of bag 415x 170x375mm No. of tools - 44	EVEREST 1006	1
6	Tool Kit for electrician's fitter	Size of box 660x380x415mm	EVEREST 1007	1
		No. of tools - 91		
	Angle plate make : Samrat/sagar			
7	Angle plate (slotted)	> 150x100x125mm > square ness 0.010mm	LUTHRA GR1	4
		> 250x150x175mm > square ness 0.01mm	LUTHRA GR 1 SIZE	2
8	Box angle plate	> 250x150x175 > IS 6232 - 1971	LUTHRA	1
Tungsten Carbide rotary burrs (Miranda / Equivalent)				
1	Conical dia 10 x length 20 mm		AM2	3
2	Conical dia 16 x length 16 mm		AM3	3
3	Cylindrical radius end dia 8 x length 20 mm		BM2	3
4	Cyl. Radius end dia 12 x length 20 mm		BM4	3
5	- Ball shape dia 8		SM2	3
6	- Ball shape dia 12		SM4	3
7	Bearing Puller (Mech.) Cap- 20-105 mm		TAPARIA BP306	1
8	Pulley extractor Size 150 mm		TAPARIA BP 308	1
9	Tap Extractor		DAYTON SETS OF 5 PCS.	2
Engineers file with handle as per BS 498:1990 and IS:1931:1965 Make : JK/Hindustan/Equivalent				
10	**Size 12 inch**		JK Sunflower	
	i) Flat Bastered			65
	ii) Flat 2nd Cut			20
	iii) Flat Smooth			5

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	iv) Round Bastered			2
	v) Round 2nd Cut			2
	vi) Round Smooth			2
	vii) Half Round Bastered			2
11	**Size 10 inch**		JK Sunflower	
	i) Flat Bastered			50
	ii) Flat 2nd Cut			10
	iii) Square 2nd Cut			10
12	**Size 8 inch**		JK Sunflower	
	i) Flat Bastered			10
	ii) Flat 2nd Cut			50
	iii) Square Bastered			30
	iii) Square 2nd Cut			50
	v) Round 2nd Cut			20
	v) Round Bastered			20
	Triangular Bastered			50
13	**Size 6 inch**		JK Sunflower	
	i) Flat Smooth			10
	ii) Flat Bastered			40
	iii) Flat 2nd Cut			10
	iv) Square 2nd Cut			10
	v) Triangular 2nd Cut			10
	vi) Knief Edge Bastered			5
14	**Needle File Set**			5
15	Shop Tray 15” x 10”		15" x 10"LOCAL MAKE	20
16	Bevel Tri-square 3”	SAMRAT NO.: 401	SAMRAT 401	30
17	Tri-Square 5”	SAMRAT NO.: 16	SAMRAT 16	30
18	Engineer’s hand scrapper	Ordering No.		
	Flat	14603	SAMRAT81F	3
	Half round	14604	SAMRAT81HR	3
	Triangular	14605	SAMRAT81T	3
19	Centre Punch 4 mm & 6 mm	Ordering no.		
		25202 & 25203	SAMRAT 81-B, 81-D	10
20	Spring loaded center punch dia. 13 mm	Ordering No.	SAMRAT 9	5
		25000		

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PART - D

3.3.4. Miscellaneous Items

a.) Office Equipments : Preferred Make : Sony/LG/Panasonic/Equivalent

Sr. No.	Item	Specification	Quantity
1	**LCD Projector**	- **XGA(1024X768)** - **3200- Lumen** - **3000:1 contrast ratio** - **USB Media viewer** - **USB – TypeA** - **Microphone input : mini jack**	**1**

b.) Kitchen Items : Preferred Make : Aquaguard (Eureka Forbes)

Sr. No.	Item	Specification	Quantity
1	**Kitchen Items (Water Filter with Cooler)**	- Water Storage tank : **120 Ltr.** - Operating power supply: **170-260V AC 1Ph** - Capacity with comfort level: **80LPH** - Water outlet temp. at 35 ˚C Inlet: **17˚C +/- 1˚C** - No. of stages for filter cum purifier : **3** - Purifier fault indication - Visual control (LEDs) - 10 Min UV auto Shutoff - Storage tank material : **SS 304** - Body Material: **Front SS304, Rest pre coated steel**	**1**

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4.0 DATA TO BE FURNISHED ALONGWITH THE TENDER

4.1 The following important technical details of the equipment offered shall be furnished along with the tender:

4.2 2 sets of Catalogues and technical literature giving general description, specifications, general arrangement requirements of power and other services viz. air, water important features of main equipment and accessories.

4.3 Questionnaire given below shall be filled up to ensure completeness of data and submitted alongwith the tender:

4.3.1 General :

i) Tenderer's registered name and address :
ii) Name and address of Tenderer's representative to whom all references can be made for expeditious coordination :
iii) Total estimated shipping weight / volume of each of the items offered :
iv) Manufacturer's company profile and reference list of similar equipment supplied in the last three years in India indicating the following
a) Description :
b) Model number :
c) Year of supply :
d) User's address

4.3.2 Technological

i) Make :
ii) Model :
iii) Overall dimensions of the machine – L x W x H, mm :
iv) Weight of single largest piece to be handled during maintenance, kg :
v) Max. weight of job, kg :
vi) Weight of machine with standard accessories, kg :
vii) Type of foundation (isolated floor mounting, etc) :
viii) Accuracy standard followed (please enclose copy of test chart of machine or similar machine already delivered) :
ix) After sales service :
x) List of standard accessories :
xi) List of optional accessories :
xii) Safety features available :

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xiv)	Instruction manuals (standard supply)	:
xv)	Reference list	
xvi)	Blank price bid along with techno-commercial bid (to be enclosed)	:
4.3.3	Electrical	
i)	Motor	:
a)	Make	:
b)	Type	:
c)	Rating	:
d)	Voltage	:
e)	Current	:
f)	Rpm	:
g)	Degree of protection	:
h)	Class of insulation	:
i)	Temperature rise over 45^{o}C ambient	:
j)	Starting current	:
k)	Starting torque / pullout torque	:
ii)	Starter	
a)	Make	:
b)	Type	:
c)	Enclosure	:
d)	Degree of protection	:
e)	Make and rating of contactor	:
f)	Make and range of O/L relays	:
g)	Whether O/L relay is with single phase prevention feature	:
h)	Provision of ON / OFF / O/L reset buttons	:
i)	Provision of tripped on O/L Lamp	:
iii)	Cables	
a)	Make	:
b)	Type	:
c)	Size	:
d)	Schematic electrical diagram	:

4.4 List of recommended spares for two years operation, equipment-wise

4.5 Delivery schedule

4.6 List of special tools and tackles

4.7 Guaranteed technical parameters

4.8 Detailed testing procedures

4.9 Unpriced break up of deliverables (standard/ optional accessories & spares).

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5.0 DATA TO BE FURNISHED BY THE SUCCESSFUL TENDERER AFTER PLACEMENT OF ORDER

5.1 The following documents / drawings shall be furnished by the successful tenderer within four weeks from the placement of order

5.2 Drawings:

a) General arrangement drawing of the equipment indicating overall dimensions, technical parameters, etc.

b) Foundation drawing with load data for the equipment with all accessories. These drawings shall indicate the location and details of anchor bolts, inserts, cable trenches / conduits, etc., to be built in the civil work.

c) Scheme of drawing of electrical / instrumentation.

5.3 Geometrical accuracy chart, performance parameter indicators and **Quality Assurance plan** for equipment under scope of supply.

5.4 Requirement of services and utilities like power,air, water, crane facility etc for commissioning and operation of machine.

5.5 Confirmation of technical parameters furnished in the tender and agreed upon during discussions.

5.6 The following documents shall be furnished in three copies during inspection/despatch of the equipment:

a) Test certificates

b) Operation, maintenance and service manual

c) Complete spare parts lists with ordering information.

The lists of equivalent and alternative makes for those spare parts which are not of manufacturer's own product shall also be furnished.

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6.0 COMPLETION SCHEDULE

All equipment being installed for various facilities / units under this contract shall be delivered to site, erected and commissioned as per the Schedule indicated below:

(Delivery, erection & commissioning)
4 Months from date of L.O.I.

All equipment intended for facilities / units for which civil works is not included under the scope of this Tender, clearance shall be obtained from the Purchaser/Consultant before delivery of these equipment to site.

The tenderer shall indicate his completion schedule accordingly in a bar chart.

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